

Appl. No. 09/550,642

Doc. Ref.: AN53

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 06-237276

(43)Date of publication of application : 23.08.1994

(51)Int.Cl.

H04L 27/20

(21)Application number : 05-023102

(71)Applicant : FUJITSU LTD

(22)Date of filing : 12.02.1993

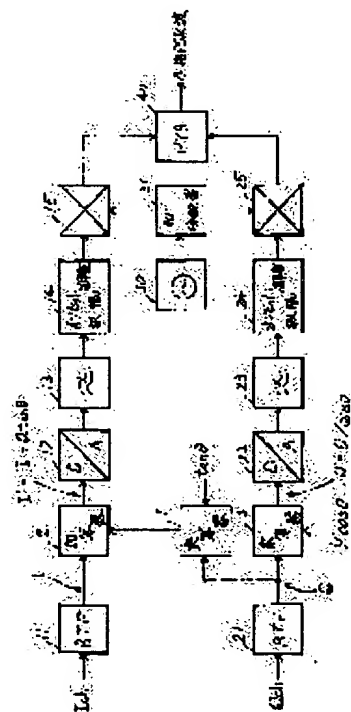
(72)Inventor : ONO MITSUHIRO
KAWASAKI TOSHIO

(54) QUADRATURE MODULATOR

(57)Abstract:

PURPOSE: To provide the quadrature modulator which uses a digital filter on each of the I channel side and the Q channel side but has a small circuitry as the whole.

CONSTITUTION: In the quadrature modulator, outputs of I and Q channels which pass filters 11 and 21 are converted by D/A converters 12 and 22 and have harmonic components eliminated by filters 13 and 23 and have amplitudes uniformized by adjusters 14 and 24, and the output of a local oscillator 30 is distributed into two signals having 90° phase difference by a distributor 31, and these two signals have phases compensated by a means 32, and outputs of adjusters 14 and 24 are multiplied by output signals of the means 32 in multipliers 15 and 25 and are synthesized by a means 40. Phase compensation is stopped and only distribution is performed in this quadrature modulator; and if phase angles of two outputs I and Q are deviated from 90 by an angle θ , a value resulting from addition of an adder 2 between an output $Q \tan \theta$ obtained by multiplying an output Q of the digital filter 21 by $\tan \theta$ in a multiplier 1 and the output I of the digital filter 11 is used as an input I' of the D/A converter 12 on the I channel side, and a value obtained by multiplying the output Q of the digital filter 21 by $1/\cos \theta$ in a multiplier 3 is used as an input Q' of the D/A converter 22 on the Q channel side.



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[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the
examiner's decision of rejection or application converted
registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

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